ELECTRICAL
& COMPUTER
ENGINEERING

ECE-595 Network Softwarization

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Course Syllabus (1/2)

Part 1: On the Need of Virtualization & Computing in future Communication Networks

Part 2: Wireless and mobile networks:

- 2.a WLANs: IEEE 802.11 and the evolution of WiFi
- 2.b Cellular networks: evolution from GSM (2G) to LTE (4G). Architecture and protocols
- 2.c Satellite networks: satellite types for telecommunications

Part 3: Virtualization and softwarization concepts

- 3.a Network Slicing
- 3.b Mobile Edge Cloud
- 3.c Content Distribution

Course Syllabus (2/2)

Part 4: Virtualization and softwarization enabling technologies
- 4.a Software Defined Networking
- 4.b Network Function Virtualization

Part 5: How to realize softwarization and virtualization
- 5.a ComNetsEmu: A Lightweight Emulator based on mininet and docker
- 5.b Realizing Network Slicing
- 5.c Realizing Mobile Edge Cloud
- 5.d Other Applications

Part 6: Standards: 5G and Beyond

Teaching Methodology

Online lectures (recorded live, available offline)

Merging theory and hands-on

Hands-on via BYOD (Bring-Your-Own-Device) – VM w/ no specific hardware requirements

The Exam

20% Quizzes

30% Home Assignments

50% Software Project (assigned later during the course)

The material

All material posted on the UNM Learn platfom

- https://learn.unm.edu

Official reference book:

- https://cn.ifn.et.tu-dresden.de/compcombook/

Software repository:

- https://git.comnets.net/public-repo/comnetsemu